UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,661	06/18/2002	Jamal Baina	11016-0007	1980

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EXAMINER
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ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *(3)* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4* is/are rejected.

7)☒ Claim(s) *3,5 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☒ Certified copies of the priority documents have been received in Application No. *10/018,661*.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10232002*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☒ Other: *Detailed Office Action*.

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P.O. Box 1450, Alexandria, Virginia 22313-1450 – www.uspto.gov

Examiner's Detailed Office Action

1. This Office Action is responsive to communication received on December 12, 1001.

2. Claims 1-6 have been examined.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. The invention as disclosed in claims 1-6 are rejected under 35 U.S.C. 101 as being non-statutory subject matter. While applicant's invention is directed towards technological arts. Applicant's claim language is not limited to practical applications. In particular, examiner has found the claimed subject matter, to be one of three exclusions recognized, outside the statutory category of invention, an abstract idea. Examiner contends that applicant's invention as claimed relates a computational model or a mathematical manipulation of a function or equation, as such, a process that merely manipulates an abstract idea or performs a purely mathematical algorithm is nonstatutory despite the fact that it might inherently have some usefulness. In Sarkar, 588 F.2d at 1335, 200 USPQ at 139, the court explained why this approach must be followed:

> No mathematical equation can be used, as a practical matter, without establishing
> and substituting values for the variables expressed therein. Substitution of values
> dictated by the formula has thus been viewed as a form of mathematical step. If the
> steps of gathering and substituting values were alone sufficient, every mathematical
> equation, formula, or algorithm having any practical use would be per se subject to
> patenting as a "process" under 101. Consideration of whether the substitution of
> specific values is enough to convert the disembodied ideas present in the formula
> into an embodiment of those ideas, or into an application of the formula, is fore-
> closed by the current state of the law.

Furthermore, for such subject matter to be statutory, the claimed process must be limited to a

practical application of the abstract idea or mathematical algorithm in the technological arts.

See Alappat, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting Diamond v. Diehr, 450 U.S. at

192, 209 USPQ at 10). *See* also Alappat 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman,

J., concurring) ("unpatentability of the principle does not defeat patentability of its practical

applications") (citing O 'Reilly v. Morse, 56 U.S. (15 How.) at 114-19). A claim is limited to

a practical application when the method or system, as claimed, produces a concrete, tangible

and useful result; i.e., the method recites a step or act of producing something that is concrete,

tangible and useful. *See* AT &T, 172 F.3d at 1358, 50 USPQ2d at 1452. *See* MPEP § 2106(IV)

Applicant is advised to make the appropriate corrections in an attempt to gain patentability.

The claimed invention as a whole must accomplish a practical application. That is, it must pro-

duce a "useful, concrete and tangible result." *State Street*, 149 F.3d at 1373, 47 USPQ2d at

1601-02. Remember, the claims define the property rights provided by a patent, and thus re-

quire careful scrutiny. Therefore, it is not enough to set forth invention in the specification.

The claims must also reflect the scope and breath of applicant's invention.

5.   Therefore, claims 1-6 are rejected under 35 USC § 101.

6.   It should be noted that if the claimed subject matter were amended to recite the invention

of which, being implemented on a computer or processor or computer-implemented method or

process or whatever word(s) or phrase(s) the written description of the specification recites for

that feature(s) of the computer. The rejection under 35 USC § 101 would be withdrawn. More-

over, if assistance is required or applicant would like to request a telephone interview, examiner

may be reached at the contact information listed below.

7.   Finally, although the subject matter of claims 3, 5 & 6 appears to define over the prior art.

However, any indication of allowability is being held in abeyance pending the resolution of the

Title 35 USC § 101 issues.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   Claims 1, 2 & 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Quincy et al. "Expert Pattern Recognition Method and for Technology-Independent

Classification of Video," IEEE, 1988 in view of *Quincy et al.* "Speech Quality Assessment

Using Expert Pattern Recognition Techniques," IEEE, 1989.

Regarding claim 1. *Quincy et al.* "Expert Pattern Recognition Method and for Technology-

Independent Classification of Video," describes a method of evaluating an visual sequence the

method being characterized in that it implements:

a) training, comprising allocating a subjective score NS(i) to each of N(0) training sequences

Si (where i = 1, 2, ..., N.) presenting degradations identified by a training vector MO(i) which is

given to each sequence S(i) in application of a first vectorizing method, in order to build up a

database of N(0) training vectors M0(j) including only said identified degradations and subject-

tive scores NS(j) [*see* Abstract, B. Proposed Solution, page 1304-1305 & C. Statistical Pattern

Recognition Classifier Module, page 1306];

b) classifying the N(0) training vectors MO(i) into k classes of scores as a function of the sub-

jective scores NS(1), that have been allocated to them, so as to form k training sets EA(j) (where

j = 1, 2, , k) which have k significant training scores NSR(j) allocated thereto [*see* Abstract,

B. Proposed Solution, page 1304-1305 & C. Statistical Pattern Recognition Classifier Module,

page 1306];

c) for each visual sequence (*see* A. Background, page 1304, *Examiner interprets the refe-*

rence to the Specialized Video and Audio Services, as the audiovisual component. Moreover,

similar processing applied to one may be applied to the other, is known to one of ordinary skill

in the art) to be evaluated, generating a vector MO using said first vectorization method [*see*

B. Objective Parameter Selection, page 1305 & C. Statistical Pattern Recognition Classifier

Module, page 1306]; and

d) allocating to the visual sequence (*see* A. Background, page 1304, *Examiner interprets*

the reference to the Specialized Video and Audio Services, as the audiovisual component.

Moreover, similar processing applied to one may be applied to the other, is known to one of

ordinary skill in the art) for evaluation the significant training score NSR(j) that corresponds to

the training set Ea(j) containing the vector that is closest to the vector MO in the sense of vector

quantification [*see* B. Objective Parameter Selection, page 1305 & C. Statistical Pattern

Recognition Classifier Module, page 1306].

Quincy et al. "Expert Pattern Recognition Method and for Technology-Independent

Classification of Video, does not explicitly describe a method of evaluating a audio sequence."

However, *Quincy et al.* "Speech Quality Assessment Using Expert Pattern Recognition

Techniques, explicitly describes a method of evaluating a audio sequence."

Regarding claim 1. *Quincy et al.* "Speech Quality Assessment Using Expert Pattern Recognition

Techniques, describes a method of evaluating a audio sequence" describes a method of evalua-

ting an audio sequence the method being characterized in that it implements:

a) training, comprising allocating a subjective score NS(i) to each of N(0) training sequences

Si (where i = 1, 2, ..., N.) presenting degradations identified by a training vector MO(i) which is

given to each sequence S(i) in application of a first vectorizing method, in order to build up a

database of N(0) training vectors M0(j) including only said identified degradations and subject-

tive scores NS(j) [*see* System Overview, page 208];

b) classifying the N(0) training vectors MO(i) into k classes of scores as a function of the sub-

jective scores NS(1), that have been allocated to them, so as to form k training sets EA(j) (where

j = 1, 2, , k) which have k significant training scores NSR(j) allocated thereto [*see* Distortion

Probability, page 209];

c) for each audio sequence to be evaluated, generating a vector MO using said first vectorization

method [*see* Abstract, page 208]; and

d) allocating to the audio sequence for evaluation the significant training score NSR(j) that

corresponds to the training set Ea(j) containing the vector that is closest to the vector MO in the

sense of vector quantification [*see* Distortion Probability & Expert System, pager 209]. It would

have been obvious at the time the invention was made to a persons having ordinary skill in the

art to combine *Quincy et al.* "Expert Pattern Recognition Method and for Technology-

Independent Classification of Video," with *Quincy et al.* "Speech Quality Assessment Using

Expert Pattern Recognition Techniques," because automatic assessment of voice transmission

quality is increasingly important to users and providers of communication services and products

[*see* Abstract].

Regarding claim 2. *Quincy et al.* "Expert Pattern Recognition Method and for Technology-

Independent Classification of Video," describes a method according to claim 1, characterized in

that it comprises: between steps b) and c): b1) for each training set EA(j), using a second

vectorization method to generate by vector quantification a reference dictionary (*Examiner*

interprets a dictionary *to be a list e.g., items of data or words stored on a computer (database)*

for reference i.e., for information retrieval or word processing) D(j) made up of N(j) reference

vectors VR(1) (where 1 = 1, 2 , . . , NJ) [*see* Fig. 1 & Fig 2; B. Objective Parameter Selection,

page 1305 & C. Statistical Pattern Recognition Classifier Module, page 1306]; and between steps

c) and d): c1) selecting amongst the reference vectors VR(1) of the k̲ reference dictionaries, the

reference vector VR(e) which is closest to said vector MO [*see* Fig. 1 & Fig 2; B. Objective

Parameter Selection, page 1305 & C. Statistical Pattern Recognition Classifier Module, page

1306]; and in that step d) allocates to the audiovisual (*Examiner interprets the obvious teaching*

of the audio portion by the Quincy et al. "Speech Quality Assessment Using Expert Pattern

Recognition Techniques," reference) sequence for evaluation the significant training score

NSR(J) corresponding to the reference dictionary containing said closest reference vector Vr(I)

[*see* Fig. 1 & Fig 2; B. Objective Parameter Selection, page 1305 & C. Statistical Pattern

Recognition Classifier Module, page 1306].

Regarding claim 4. *Quincy et al.* "Expert Pattern Recognition Method and for Technology-

Independent Classification of Video," describes a method according to claim 1, characterized in

that the significant training scores NSR.(j) of at least some (*Examiner interprets* some *to be an*

unknown, undetermined, or unspecified unit or thing; being one, a part, or an unspecified

number of something e.g., as a class or group, named or implied. Therefore, examiner interprets

at least "one" as the number of reference dictionaries) of the k reference dictionaries are distri-

buted in non-uniform manner along the score scale [*see* III. Research and Development Steps,

page 1306].

Claim Objection

10.   Claims 3, 5 & 6 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

Correspondence Information

11.   Any inquires concerning this communication or earlier communications from the examiner should be directed to Michael B. Holmes, who may be reached Monday through Friday, between 8:00 a.m. and 5:00 p.m. EST. or via telephone at (571) 272-3686 or facsimile transmission (571) 273-3686 or email Michael.holmesb@uspto.gov.

If you need to send an Official facsimile transmission, please send it to (703) 746-7239.

If attempts to reach the examiner are unsuccessful the Examiner's Supervisor, Anthony Knight, may be reached at (571) 272-3687.

Hand-delivered responses should be delivered to the Receptionist @ (Customer Service Window Randolph Building 401 Dulany Street Alexandria, VA 22313), located on the first floor of the south side of the Randolph Building.

Michael B. Holmes
. Patent Examiner
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United States Department of Commerce
. Patent & Trademark Office

Thursday, June 16, 2005 ·

MBH